

Agilent Ref: 10031269-1
United States Application Serial No. 10/712,741

In the Claims:

1. **(Currently Amended)** A degassing microarray element comprising:
 - (a) a substrate having a surface comprising at least one gasket, wherein said at least one gasket forms a bounded area on said surface for containing a fluid; and
 - (b) a gas permeable membrane, wherein said membrane is supported by said substrate.
2. **(Currently Amended)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is permeable at least to one of: helium, hydrogen, neon, nitrogen, argon, oxygen, ozone, carbon dioxide, ~~ozone~~, and combinations thereof.
3. **(Currently Amended)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is chosen from: nylon; polyimide, polysulfone; polycarbonate; cellulose acetate; perfluoro-2,2-dimethyl-1,3-dioxole; perfluoroalkoxy fluorocarbon, ethylene tetrafluoroethylene; polytetrafluoroethylene; ~~polytetrafluoroethylene~~; and amorphous fluoropolymeric membranes.
4. **(Original)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is an amorphous fluoropolymeric membrane comprising about 87 mol% 2,2-bistrifluoromethyl-4,5-difluoro-1,3-dioxole and about 13 mol% tetrafluoroethylene.
5. **(Original)** The degassing microarray element of Claim 1, wherein said gas permeable membrane has a thickness that ranges from about .01mm to .25mm.
6. **(Original)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is non porous.

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7. **(Original)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is present on a porous support.

8. **(Original)** The degassing microarray element of Claim 7, wherein said porous support is a separate component from said substrate.

9. **(Original)** The degassing microarray element of Claim 7, wherein said porous support is not a separate component from said substrate.

10. **(Original)** The degassing microarray element of Claim 7, where in said porous support comprises pores having an average pore diameter ranging from about .0001 mm to about .001 mm.

11. **(Currently Amended)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is positioned on said ~~gasketed substrate~~ surface of said substrate.

12. **(Original)** The degassing microarray element of Claim 1, wherein said gas permeable membrane is positioned within said substrate.

13. **(Currently Amended)** The degassing microarray element of Claim 12, further comprising at least one channel configured for transporting fluid present on said ~~gasketed~~ substrate surface to said gas permeable membrane for degassing and for transporting degassed fluid from said gas permeable membrane to said ~~gasketed~~ substrate surface.

14. **(Original)** The degassing microarray element of Claim 1, wherein said substrate is a microarray backing element substrate and said degassing microarray element is a microarray backing element.

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15. **(Original)** The degassing microarray element of Claim 1, wherein said substrate is an array substrate and said degassing microarray element is an array assembly.

16. **(Currently Amended)** The degassing microarray element of Claim 1, further comprising at least one port for transporting fluid from a first side of said micorarray element to a second side of said **backing microarray** element.

17. **(Original)** The degassing microarray element of Claim 1, further comprising at least one mixing element.

18. **(Original)** The degassing microarray element of Claim 1, wherein said gasket is fixedly attached to said substrate.

19. **(Original)** The degassing microarray element of Claim 1, wherein said gasket is not fixedly attached to said substrate.

20. **(Currently Amended)** A system for degassing a fluid contacted with an array assembly, said system comprising:

- (a) a degassing microarray-backing element comprising
 - (i) a substrate having a surface comprising at least one gasket **wherein said at least one gasket forms a bounded area on said surface for containing a fluid,** and
 - (ii) a gas permeable membrane, **wherein said membrane is supported by said substrate;** and
- (b) an array assembly.

21. **(Original)** The system of Claim 20, further comprising a vacuum source operatively associated with said gas permeable membrane.

22. **(Original)** The system of Claim 20, further comprising at least one mixing element.

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23. **(Original)** The system of Claim 22, wherein said at least one mixing element is present within or on said degassing microarray-backing element.
24. **(Original)** The system of Claim 20, wherein said gasket is fixedly attached to said substrate.
25. **(Original)** The system of Claim 20, wherein said gasket is not fixedly attached to said substrate.
26. **(Currently Amended)** A system for degassing a fluid contacted with an array assembly, said system comprising:
- (a) an array assay station comprising a substrate having a surface comprising at least one gasket, wherein said at least one gasket forms a bounded area on said surface for containing a fluid;
 - (b) a gas permeable membrane, wherein said membrane is supported by said substrate; and
 - (c) [[b]] an array assembly.
27. **(Original)** A method of performing an array assay, said method comprising contacting a sample with an array under conditions sufficient to perform an array assay, wherein said contacting further comprises degassing said sample.
28. **(Currently Amended)** The method of Claim 27, wherein said degassing comprises evacuating gaseous components through a gas permeable membrane by applying a vacuum to [[a]] said gas permeable membrane.
29. **(Currently Amended)** The method of Claim 28, wherein said **applied** vacuum applies a pressure that ranges from about 12 psi to about 14.5 psi.
30. **(Original)** The method of Claim 28, wherein said gas permeable membrane is non porous.

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31. **(Original)** The method of Claim 28, wherein said gas permeable membrane is substantially the same size as said array.
32. **(Currently Amended)** The method of Claim 27, wherein said degassing comprises reducing the amount of dissolved gases in said sample.
33. **(Original)** The method of Claim 27, wherein said degassing comprises reducing the amount of un-dissolved gases in said sample.
34. **(Original)** The method of Claim 27, wherein said contacting further comprises mixing said sample.
35. **(Original)** The method of Claim 27, further comprising reading at least one array to obtain a result.
36. **(Original)** A method comprising transmitting a result obtained by a method of claim 35 from a first location to a second location.
37. **(Original)** The method of Claim 36, wherein said second location is a remote location.
38. **(Original)** A method comprising receiving said result obtained by the method of Claim 35.
39. **(Currently Amended)** A kit for performing an array assay, said kit comprising:
- (a) a backing element comprising:
 - (i) a substrate surface comprising at least one gasket wherein said at least one gasket forms a bounded area on said surface for containing a fluid, and
 - (ii) a gas permeable membrane, wherein said membrane is

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supported by said surface; and

(b) an array assembly.